

APV Amerio

Automatic Contact Plate Freezers

Parameters & Technical Data

A simple way to cut your freezing costs dramatically — don't freeze air.

Amerio double contact plate freezers take heat directly out of a product, through the plates, into refrigerant. Air blast freezing involves cooling the air as well as the product. Much harder, much slower, and more expensive. Direct contact freezing is also better for product quality, minimizing shrinkage and dehydration.



Amerio freezes for 1/3 to 1/2 less

Though costs vary somewhat by product, a bakery example suggests the typical scale of savings. Air blast freezing of unbaked rolls or donuts costs 1.5-2¢ per pound on average. Amerio would cost less than a penny per pound. Compared against cryogenic methods, the savings are even greater!



Amerio applies to almost any frozen product

Amerios are used successfully to freeze meat, poultry, bakery products, fish, vegetables, ice cream, and specialty entrees. If you have another application, let us demonstrate the Amerio principle in our pilot plant.



More firms choose Amerio

If you believe that user acceptance is the ultimate proof, here's an important fact: *More packaged food is frozen in Amerio plate freezers than any other method in the world.*



There's an Amerio that's just your size

Amerios come in a number of sizes and throughput rates to fit any freezing operation, from pilot plant to 'round the clock production lines. All are very compact and simple to operate. We can also equip yours with automated conveying and/or microprocessor control.

Get more facts fast



Detailed cost comparisons of different freezing methods are available. There's even a video on plate freezing (see for yourself). Of course we have descriptive product literature, too. Contact us for complete information.



AMERIOMATIC AUTOMATIC CONTACT PLATE FREEZERS

It is very simple to calculate the proper number of stations required to freeze a specific sized package in the period of time determined by test or experience.

1. Determine the number of packages per station by using the actual size of package to be handled and make sketches of the plate. (Refer to example below.) Draw in the package using applicable dimensions to determine the most efficient use of space on the plate.

Note: Plate sizes are listed by net freezing surface. Since package flaps and sides may have a slight bulge and there is no mechanism to squeeze the package together, an allowance of a few inches should be provided to compensate for this condition. In automatic freezers when the plate is full, there must be a space at the unloading end which is not greater than 1/2 of the package infeed dimension. This is to provide proper space for the package to tilt and slide during the unloading operation.

2. Request production rate in packages per minute.
3. By test curves or using experience factor, estimate freezing time. (As a general rule products such as "TV dinners, pies, etc., require about one (1) hour per inch of thickness. Ice cream and other densely packaged products do not follow this rule and require less time. When in doubt make arrangements to run a test.)

4. Number of stations required =
$$\frac{\text{Production Rate X Freezing Time in Minutes}}{\text{Packages per Station}}$$

5. With number of stations required as determined in number 4, refer to the Station Selection Chart on back page using the package thickness and model No. as guide.

Note: If the number of stations required is less than the number shown in the chart, specify that model freezer, but order only the number of stations required. If the number of stations required is greater, divide the maximum number of stations per freezer into the required number of stations and this will give the number of freezer units required. As an **example**: if 40 stations are required and the maximum stations per unit for that package are 30, it would be best to select two (2) twenty-station units permitting the addition of the other 10 stations per unit as production requirements are increased.

EXAMPLE FOR COMPUTING PROPER SIZED AMERIO FREEZER

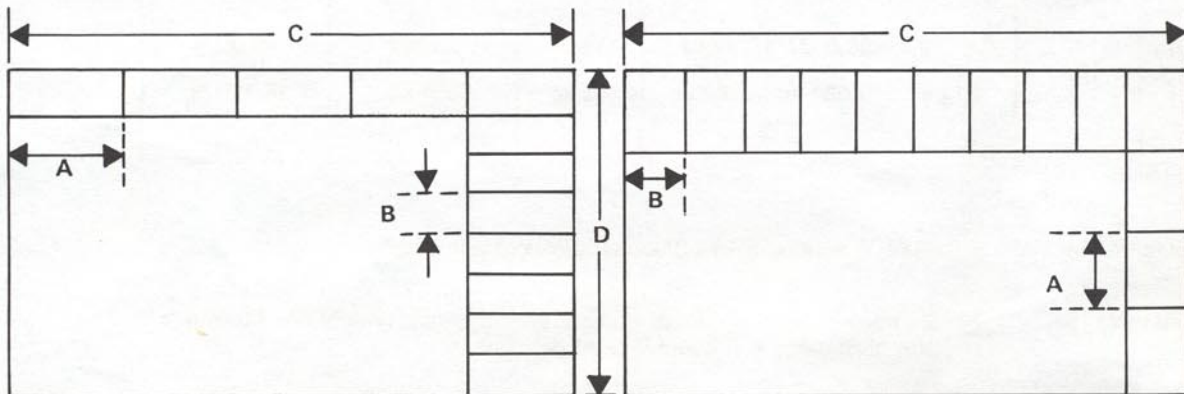


FIGURE #1

FIGURE #2

A }
B } Package Dimensions

C }
D } Package Dimensions

Figure #1

Figure #2

Dimensions $C \div A$ = Number of Packages Across
Dimensions $D \div B$ = Number of Packages Deep

Dimensions $C \div B$ = Number of Packages Across
Dimensions $D \div A$ = Number of Packages Deep

Use this method, determination is made on the maximum number of packages that can be handled per station. Unless customer specifies otherwise, selection should be made using layout which provides for maximum number of packages per station.

AMERIOMATIC PLATE FREEZERS
(Basic Dimensions, Specifications & Weights)

MODEL NUMBER	REFRIGERANT	CONNECTION SIZE				CABINET DIMENSIONS				MINIMUM CLEARANCE TO MOVE UNIT INTO PLANT				WEIGHTS (APPROXIMATE)				
		All Pipe Sizes Are Nominal		WELD NECK WITH COMPANION FLANGE		Less Hydraulic Pump Unit, Loader/Unloader		Including 12" (1') Cyl. Clearance		FULLY ASSEMBLED		SEMI-KNOCKED DOWN		Basic Wt.* 10 Station Unit Incl. Pump	Wt. Per Extra Station	Refrig. Wt. Per Station @100% Liquid NH ₃	Maximum Allowable Wt. of Product Per Station Uniform Loading (14#/Sq. Ft.)	Maximum Load** Rating of Freezer Includes Product; Plus Refrigerant; Plus Plates
		LIQUID	SUCTION	Front	Side	Height	Front	Height	Front	Standard	Oversize							
MODEL 21	NH ₃	3 in (76)	4 in (101)	9 ft 6 in (2896)	7 ft 0 in (2134)	10 ft 6 in (3200)	10 ft 6 in (3048)	7 ft 8 in (2337)	N/A	N/A	N/A	14,500# 6569 kg	275# 125 kg	60# 27 kg	500# 227 kg	15,000# 6795 kg		
MODEL 31	NH ₃	3 in (76)	4 in (101)	10 ft 2 in (3099)	12 ft 1 in (3683)	13 ft 5 in (4089)	10 ft 6 in (3200)	12 ft 9 in (3886)	10 ft 6 in (3200)	7 ft 9 in (2362)	8 ft 10 in (2692)	19,000# 8,626 kg	500# 227 kg	120# 55 kg	1,000# 453 kg	31,000# 14,075 kg		
MODEL 35	NH ₃	3 in (76)	5 in (127)	11 ft 8 in (3556)	13 ft 10 in (4216)	13 ft 5 in (4089)	12 ft 0 in (3658)	12 ft 9 in (3886)	12 ft 0 in (3658)	7 ft 9 in (2362)	8 ft 10 in (2692)	23,000# 10,440 kg	700# 318 kg	170# 77 kg	1,300# 589 kg	34,000# 15,435 kg		
MODEL 37	NH ₃	3 in (76)	5 in (127)	11 ft 8 in (1680)	14 ft 10 in (4521)	18 ft 0 in (5486)	N/A	N/A	12 ft 1 in (3683)	N/A	9 ft 0 in (2743)	28,000# 12,684 kg	800# 362 kg	185# 83 kg	1,400# 634 kg	40,000# 18,120 kg		

Notes:

- A. Minimum space required for removal of plate should be equal to length of plate. If space is not available, plate may be tilted at removal in approximately one foot less space.
- B. Dimensional drawing (ADF) will be supplied per customer order.
- C. Hydraulic motor system 3/60/230—460V, unless otherwise specified. Control wiring is 1/60/115V.
- D. Consult factory if production rates require loading of station in less than one minute.
- E. Single roof mounted cylinder design adds 5 ft 2 in extension on height. For in-plant assembly, read height at cylinder.

Shipping Weight = Basic Weight + (Extra Stations X Weight per Station)

Operating Weight = Shipping Weight + (No. of Stations X Refrigerant Weight per Station) + (No. of Stations X Product Weight per Station)

() = Millimeters

Approximate Export Weights and Dimensions available on application.

N/A = Not Applicable

Replacement Plates:

For additional information and details on Replacement Plates Refer to Price Sheet U-1-205.100
Spacer Sticks: Available per customer request.

*Models other than standard one-piece cabinet — consult factory.
**This Load Factor is based on lifting capacity of hydraulic cylinders.

**STATION SELECTION CHART
AMERIOMATIC PLATE FREEZERS
(Aluminum Plates)**

MODEL	21	31	35	37
PLATE SIZE	70 x 72 in (1778 x 1829)	73 1/2 x 127 in (1860 x 3225)	92 x 144 in (2340 x 3658)	92 x 156 in (2340 x 3962)
NUMBER OF STATIONS	STANDARD ONE-PIECE CABINETS		"OVERSIZE" SEMI-KNOCK DOWN CABINETS	
	MAXIMUM PACKAGE THICKNESS		MAXIMUM PACKAGE THICKNESS	
	MODEL 21	MODELS 31 & 35	MODELS 31 & 35	MODEL 37
10	3 ¹¹ / ₁₆ in (94)	5 in (127)	6 ³ / ₁₆ in (158)	7 ¹ / ₂ (191)
11	3 ¹ / ₄ in (83)	4 ⁷ / ₁₆ in (113)	5 ¹ / ₂ in (140)	6 ¹¹ / ₁₆ in (170)
12	2 ¹⁵ / ₁₆ in (74)	4 in (102)	5 in (127)	6 ¹ / ₁₆ in (154)
13	2 ⁵ / ₈ in (67)	3 ⁵ / ₈ in (92)	4 ¹ / ₂ in (114)	5 ¹ / ₂ in (140)
14	2 ³ / ₈ in (60)	3 ¹ / ₄ in (83)	4 ¹ / ₈ in (105)	5 ¹ / ₁₆ in (129)
15	2 ¹ / ₈ in (54)	3 in (76)	3 ³ / ₄ in (95)	4 ⁵ / ₈ in (117)
16	1 ¹⁵ / ₁₆ in (49)	2 ³ / ₄ in (70)	3 ¹ / ₂ in (89)	4 ⁵ / ₁₆ in (109)
17	1 ³ / ₄ in (44)	2 ¹ / ₂ in (63)	3 ³ / ₁₆ in (81)	4 in (100)
18	1 ⁵ / ₈ in (41)	2 ⁵ / ₁₆ in (58)	3 in (76)	3 ¹¹ / ₁₆ in (94)
19	1 ⁷ / ₁₆ in (36)	2 ¹ / ₈ in (54)	2 ³ / ₄ in (70)	3 ⁷ / ₁₆ in (87)
20	1 ⁵ / ₁₆ in (33)	2 in (50)	2 ⁹ / ₁₆ in (65)	3 ¹ / ₄ in (83)
21	1 ¹ / ₄ in (32)	1 ⁷ / ₈ in (48)	2 ³ / ₈ in (60)	3 in (76)
22	1 ¹ / ₈ in (28)	1 ¹¹ / ₁₆ in (43)	2 ¹ / ₄ in (57)	2 ¹³ / ₁₆ (71)
23	1 in (25)	1 ⁹ / ₁₆ in (40)	2 ¹ / ₈ in (54)	2 ¹¹ / ₁₆ (68)
24	—	1 ¹ / ₂ in (38)	2 in (50)	2 ¹ / ₂ in (63)
25	—	1 ³ / ₈ in (35)	1 ⁷ / ₈ in (48)	2 ³ / ₈ in (60)
26	—	1 ¹ / ₄ in (32)	1 ³ / ₄ in (45)	2 ¹ / ₄ in (57)
27	—	1 ³ / ₁₆ in (30)	1 ⁵ / ₈ in (41)	2 ¹ / ₈ in (54)
28	—	1 ¹ / ₈ in (28)	1 ⁹ / ₁₆ in (40)	2 in (50)
29	—	1 ¹ / ₁₆ in (27)	1 ⁷ / ₁₆ in (37)	1 ⁷ / ₈ in (48)
30	—	1 in (25)	1 ³ / ₈ in (35)	1 ¹³ / ₁₆ in (46)
31	—	1 ⁵ / ₁₆ in (24)	1 ⁵ / ₁₆ in (33)	1 ¹¹ / ₁₆ in (43)
32	—	—	—	1 ⁵ / ₈ in (41)
33	—	—	—	1 ⁹ / ₁₆ in (40)
34	—	—	—	1 ¹ / ₂ in (38)
35	—	—	—	1 ⁷ / ₁₆ in (36)
36	—	—	—	1 ⁵ / ₁₆ in (33)
37	—	—	—	1 ¹ / ₄ in (32)